

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

iROBOT CORPORATION,

Plaintiff,

V.

SHARKNINJA OPERATING, LLC,
SHARKNINJA MANAGEMENT, LLC, and
SHARKNINJA SALES COMPANY,

Defendants.

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) Civil Action No. 1:19-cv-12125
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IROBOT CORPORATION'S OPENING CLAIM CONSTRUCTION BRIEF

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Note: All emphasis is added unless otherwise indicated.

iRobot’s pioneering Roomba® technology created today’s robotic vacuum cleaner market. In this case, iRobot accuses Shark of infringing five patents directed to its robotic vacuums, each covering a different invention: U.S. Patent Nos. 8,950,038 (“the ’038 patent”); 9,550,294 (“the ’294 patent”); 8,418,303 (“the ’303 patent”); 10,045,676 (“the ’676 patent”); and 9,492,048 (“the ’048 patent”). The asserted claims describe iRobot’s inventions in understandable and ordinary terms that need almost no construction. Shark, however, asks the Court to depart from the customary meanings of non-technical terms, import limitations from the specification, and distort the prosecution histories all in a transparent attempt to narrow the claims in ways it believes will help it dodge its undeniable infringement. Shark’s proposed constructions cannot be sustained.

ARGUMENT

A. “removable” (’038, claims 1, 9, 10; ’303, claims 1 and 10)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary.	“capable of being detached and reattached”

Shark’s narrow construction of “removable” defies ordinary English and finds no support in the ’038 and ’303 patents. Each patent’s claims describe various features as “removable.” In every case, “removable” needs no construction. It is a non-technical word whose meaning is truly plain. Something is “removable” if it is “able to be removed.” Ex. 7; *see* Ex. 8 (“easily removed”). Shark’s proposal—which requires that something “removable” also be “reattach[able]”—makes no sense. To say that something is “removable” does not imply it is also “capable of being ... reattached.” To “remove” and to “attach” are *opposites*. “Absent disclaimer or lexicography, the plain meaning of the claim controls.” *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1369 (Fed. Cir. 2012). There is no disclaimer or lexicography here, and nothing in either patent demands or even suggests a use of “removable” that departs from the term’s ordinary meaning.

In particular, neither patent equates a part’s removability with an ability to reattach that

same part. To the contrary, the '038 patent makes clear that even if a part can be “removed,” it need not be capable of reattachment—instead, it may need to be “replaced” entirely: “For example, a broken or worn component may be *removed* and *replaced* with a properly functioning component.” '038 patent at 5:39-42; *see also id.* at 1:46-49, 1:52-58, 12:59-63. And in the '303 patent, components are “removable” when they are not “fixed” in place. *See* '303 patent at 4:55-59 (contrasting a “removable” “secondary brush” with a “fixed main brush”). Even if some “removable” components *can* be reattached, the specifications do not say that they *must* have that capability. “[A]bsent contravening evidence from the specification or prosecution history, plain and unambiguous claim language controls the construction analysis.” *DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1347 (Fed. Cir. 2008). There is no need to construe “removable” here.

B. “a removable caster wheel assembly disposed on the chassis, the caster wheel being configured to turn about a vertical axis and roll about a horizontal axis” ('038, claim 1)

iRobot’s Proposed Construction	Shark’s Proposed Construction
The term “caster wheel assembly” means “support wheel assembly other than a drive wheel.” No further construction is necessary.	“a caster wheel assembly disposed on the chassis allowing the caster wheel to turn about a vertical axis and roll about a horizontal axis, wherein the complete caster wheel assembly can be detached and reattached without taking it apart”

The robots claimed in the '038 patent have two distinct types of wheels: a “caster wheel assembly” and “drive wheel assemblies.” '038 patent (claim 1). Indeed, claim 1 *requires* that the two wheel assemblies be distinct: “the drive wheel assemblies and the removable caster wheel assembly are each *separately and independently* removable from the respective receptacles of the chassis.” In addition, because the “claim lists [the two] elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010).

The specification reinforces the distinction by explaining that the separate wheels serve

separate functions. The “drive wheel assemblies ... provide propulsion,” whereas a “caster wheel assembly ... provides a third point of contact with the work surface.” ’038 patent at 5:54-59. The specification also repeatedly differentiates “caster wheel” and “drive wheel” assemblies, even in the same sentence. *Id.* at 5:50-54; 6:59-62; 7:28-35. Because “the only elements disclosed in the specification as” a “caster wheel assembly” are “separate structures from the” “drive wheel assemblies,” the “specification ... confirms” that a “caster wheel assembly” is a “support wheel assembly other than a drive wheel.” *Becton*, 616 F.3d at 1254. No further construction is needed.

Shark, however, seeks to import limitations from a single figure in the specification—“the cardinal sin[.]” of claim construction. *AIP Acquisition LLC v. Cisco Sys., Inc.*, 714 F. App’x 1010, 1016 (Fed. Cir. 2017) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1320 (Fed. Cir. 2005) (en banc)). In Shark’s view, a “caster wheel assembly” must include every component in Figure 8 and be capable of being “detached and reattached without taking it apart.” That is incorrect and a transparent attempt to take a second bite at arguing that “removable” means “reattach[able].”

Even if a “removable caster wheel assembly” did need to be re-attachable, a “caster wheel assembly” need not include every component in Figure 8. Indeed, the claims do not require that a “caster wheel assembly” include any more than a “caster wheel” itself. Claim 1 demands that “drive wheel assemblies” have a “wheel,” “drive motor,” and “housing,” and that the “cleaning assembly” have a “cleaning head,” “drive motor,” and “housing.” In contrast, for a “caster wheel assembly” the claim requires only a “caster wheel”—*not*, for example, a “housing.”

The specification confirms that a “caster wheel assembly” need not include, *e.g.*, a “housing.” ’038 patent at 5:52-53, 11:14-15. Again, nothing requires that the claimed assembly have every component in the “example” shown in Figure 8, much less its “housing.” *See id.* at 10:46-47. To the contrary, Figure 9B shows “an example” of the “removable caster wheel

assembly 114” from Figure 1B *without* a “housing.” *Id.* at 5:49-53, 11:14-15. Shark’s attempt to import limitations into the claims from a single figure in the specification must be rejected.

C. “coulometry” (’294, claim 10)

iRobot’s Proposed Construction	Shark’s Proposed Construction
“measuring the current (flow of electric charge over time) constantly entering and leaving the power source”	“measuring the current constantly entering and leaving the power source”

Claim 10 of the ’294 patent allows a robot “to determine the quantity of energy in [its] energy storage unit using at least one of *coulometry* and operating time.” The parties agree that coulometry is a measurement of “current” passing through the power source. And Shark cannot deny that current is the flow of electric charge over time. *See* Ex. 9 at 446. Nothing in the ’294 patent redefines that basic electrical term. Shark’s disagreement with iRobot’s clarifying construction—that current is the “flow of electric charge over time”—is thus inexplicable.

iRobot’s clarification would undeniably help the jury. First, a jury may confuse terms such as current, voltage, or capacity, all of which could be used to measure a battery’s remaining charge. iRobot’s construction thus clarifies the meaning of “current.” Second, claim 10 says that a quantity of energy can be determined using “*at least one of coulometry and operating time*,” which means that “operating time” alone can be used to make the determination. The specification confirms that. *See* ’294 patent at 2:40-42 (“coulometry *or* setting a time period”); *id.* at 3:54-56 (similar). Shark, however, has argued that claim 10 does not permit using operating time alone; instead, Shark contends that operating time must be used with some other information (*e.g.*, a lookup table) to determine a quantity of energy. But claim 10’s recitation of “coulometry” defeats that argument: it shows that when iRobot intended to claim a property that required multiple pieces of information, it did so expressly. Coulometry measures two quantities—electric charge *and* time—whereas operating time measures only one (time). iRobot’s clarification thus makes it less likely that the

jury may believe, incorrectly, that claim 10 requires using “operating time” with other information to determine a quantity of energy. Shark’s objection to that clarification is baseless.

D. “detecting a need to recharge the energy storage unit” (’294, claim 1)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “determining a need to recharge the energy storage unit.”	“determining a need to recharge based on detecting remaining battery life”

Fundamental claim construction principles doom Shark’s construction of “detecting a need to recharge the energy storage unit” in claim 1 of the ’294 patent. That term identifies only *what* needs to be recharged—“the energy storage unit.” It does not restrict *how* a robot can “detect[]” such a “need.” Asserted claims 8 and 10, however, make clear that Shark’s proposed construction is too narrow. Claim 10 depends from claim 8, which depends from claim 1. Claim 8 requires that a robot return to a base “in response to a quantity of energy remaining in the energy storage unit,” and claim 10 says “to determine the quantity of energy in the energy storage unit using *at least one of* coulometry and *operating time*.” Dependent claim 10 thus covers a robot that returns to a base *solely* in response to “operating time,” and broader claim 1 must encompass that approach in the “detecting a need to recharge the energy storage unit” limitation. *See Biedermann Motech GmbH v. Alphatec Spine Inc.*, 482 F. Supp. 2d 32, 34 (D. Mass. 2007). Claim 1 thus does not narrowly require using an electronic tool to directly detect a battery’s remaining charge.

The specification cements that reading. When it mentions a “need to recharge [the robot’s] battery,” it does not limit how the “need” is determined. ’294 patent at 13:60-62. And elsewhere it makes clear that a robot can monitor an energy level by “simply operat[ing] the robot ... for a predetermined time period before recharging, without determining which energy level subsequence [the robot] is operating in.” *Id.* at 15:50-63; *see also id.* 2:31-42 (“determin[e] a quantity of energy stored in the energy storage unit” by “setting a time period”); *id.* at 3:54-56

(“set a time period to determine the quantity of energy stored”).

In its preliminary injunction decision, the Court “tentative[ly]” understood “detecting” to require “tak[ing] an action in order to determine whether there is ‘a need to recharge,’” *i.e.*, “making a calculation or determination as to remaining battery life.” D.I. 78 at 5, 14-15. That reading, which was “preliminary only,” was formed without the full benefit of claim 10. *Id.* at 11 n.4, 14-16. While iRobot agrees that detecting a need to recharge requires some determination, claim 10 shows that the determination can be measuring the operating time alone.

The other evidence the Court cited supports *iRobot’s* construction. D.I. 78 at 14-15. In the specification’s exemplary uses of “detect” cited by the Court, an object “detects” a property, but *how* the property is detected (*e.g.*, directly or indirectly) is left open. *See* ’294 patent at 16:47-48 (“Circuitry within the base station 10 detects the presence of the robot ...”). Indeed, in one example, a “microprocessor ... detects that the robot 40 is present”—*i.e.*, *infers* that it has reached the base—by *indirectly* “determining that the voltage [between two contacts] has fallen into [a] specific range.” *Id.* 17:9-10. So, too, can a robot infer or “detect[] a need to recharge” indirectly by measuring “operating time” alone. Shark’s unduly narrow construction is incorrect.¹

E. “navigational control system configured to autonomously: control ... return ... dock ... recharge ... and then to continue” (’294, claim 1)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “autonomously” means “without human assistance or intervention.” No further construction is necessary.	“a navigational control system configured to perform the claimed sequence without human assistance or intervention”

For this term, Shark again seeks a construction where none is needed. The parties agree that, in the ’294 patent, “autonomously” means “without human assistance or intervention.” That

¹ The Court also cited expert testimony. D.I. 78 at 14-15. The parties have since agreed they will not rely on expert testimony for this *Markman* briefing, hearing, or technology tutorial. Ex. 6.

is the plain meaning of that term and what the patent says. *See* '294 patent at 1:40-41. iRobot does not agree, however, that the claim requires any particular “sequence” of steps.

Indeed, accepting Shark’s argument would improperly convert the '294 patent’s *apparatus* claims into *method* claims. That violates a fundamental patent-law distinction. “[A]pparatus claims cover what a device *is*, not what a device *does*.” *Toshiba*, 681 F.3d at 1369; *see Paragon Sols., LLC v. Timex Corp.*, 566 F.3d 1075, 1090 (Fed. Cir. 2009) (same). And here, “Claim 1 recites that the [‘navigational control’] system is ‘*configured to*’ do certain tasks, “not that the step[s] must actually be carried out,” much less in a specific order. *L.C. Eldridge Sales Co. v. Azen Mfg. Pte., Ltd.*, 2013 WL 2285749, at *3 (E.D. Tex. 2013) (original emphasis); *cf. Medline Indus., Inc. v. C.R. Bard, Inc.*, 2019 WL 337130, at *6 (N.D. Ill. 2019) (“the functional language ‘configured to’ ... is a common, recognized term for introducing apparatus claims,” and holding the claims did not require method steps). iRobot’s *apparatus* claims do not require actually performing any *method* steps at all, let alone in a particular order or “sequence.”

Shark has also suggested that the claimed robots must be capable of “control[ing],” “return[ing],” “dock[ing],” and “recharg[ing]” the robot as soon as it is taken out of the box. That is incorrect. The claims are satisfied even if a navigational control system can autonomously do those things only *after* a user initially “configure[s]” the robot: as the specification explains, the “goal” of the invention “is a robot that could be *configured* a single time, which would *then* operate autonomously.” '294 patent at 1:39-41. Shark’s attempt to narrow the claims must be rejected.

F. “prevent spooled filaments from traversing axially beyond the extremity of the mounting feature about which the axial end guard is mounted” (’303, claim 1); “prevent spooled filaments from traversing axially beyond the extremity of at least one of the end mounting features” (’303, claim 10)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “traversing axially beyond the extremity” means “going beyond the end.” No further construction is necessary.	“keep spooled filaments within the brush ends”

The ’303 patent claims robots with a “brush” that may gather “spooled filaments” like hair. ’303 patent (claims 1, 10). The “brush” has “an elongated core” with two distinct components: “an outer surface” and “end mounting features *extending beyond* the respective axial ends of the outer surface.” *Id.* A separate “axial end guard” is “configured to prevent spooled filaments from traversing axially beyond the extremity of” a “mounting feature.” *Id.* The meaning is clear: a brush that prevents spooled filaments from going “beyond the extremity [*i.e.*, end] of” a “mounting feature” satisfies the claims, even if the spooled filaments can go beyond the core’s “outer surface.”

The specification reinforces that construction. Figure 6, for example, shows a brush with an “end guard 130” and “labyrinth wall 170,” both of which are beyond the end of the brush core’s outer surface. *Id.* at 6:53-56, fig. 6. The “labyrinth wall 170 ... prevents accumulations of hair and other filaments 33 from passing *end guard 130*”—*i.e.*, allows filaments to pass the end of the brush core’s outer surface as long as they do not pass the end guard. *Id.* at 6:56-58.

Shark’s explanation for its construction shows it cannot be right. According to Shark, the “end guard” must “keep spooled filaments within the *brush ends*,” a term that does not appear in the claims. At the L.R. 16.6(e)(1)(B) conference, Shark thus explained its view that “brush ends” means features 135A and 135B in Figure 3—*i.e.*, the ends of the core’s “outer surface.” The claims alone defeat that narrow construction: although Shark’s construction would require spooled filaments to stay within the “outer surface” of the brush’s core, the claims allow the filaments to

go beyond the core's "outer surface" if they stay within the extremity of a "mounting feature."

Nor would a single figure or specification passage support Shark's proposal anyway. A patent's claims generally are "not limited to inventions looking like those in the drawings," even if the "figures all depict" embodiments in the same way. *Skedco Inc. v. Strategic Operations, Inc.*, 685 F. App'x 956, 960 (Fed. Cir. 2017); *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007). And the Federal Circuit "has repeatedly 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.'" *Imaginal Systematic, LLC v. Leggett & Platt, Inc.*, 805 F.3d 1102, 1109-10 (Fed. Cir. 2015). Here, "FIG. 3 illustrates an *example* of a spool roller," and not even a preferred one at that. '303 patent at 5:16. The specification's description of that one non-limiting example does not "clearly set forth a definition" of "brush ends" or otherwise use "words of manifest exclusion or restriction" to limit what that term means. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371-72 (Fed. Cir. 2014). Shark's narrow construction finds no support in the patent and must be rejected.

G. "labyrinth seal" ('303, claim 9)

iRobot's Proposed Construction	Shark's Proposed Construction
No construction necessary.	"a seal formed in a maze-like pattern"

In claim 9 of the '303 patent, "the axial end guard forms a *labyrinth seal* about the end mounting feature." Shark seemingly assumes that any labyrinth, in any context, is like a maze. That is false. "[L]abyrinth seal[s]" are a class of "non-contacting sealing device[s] that consist[] of a series of cavities connected by small clearances." Ex. 12 at 2830. The class is not defined by a "maze-like" design, as Shark contends. Instead, labyrinth seals come in "a wide range of straight, stepped, and mixed straight and stepped" configurations. *See* Ex. 13 at 2.

Claim 9 does not limit the claimed labyrinth seal to one that is "maze-like," and neither does the rest of the patent. "Labyrinth seal" does not appear in any other claim, and the patent's

single description of an illustrative “simple labyrinth seal” does not define or depict it as “maze-like.” ’303 patent at 6:53-59, fig. 6. Indeed, the word “maze” is nowhere to be found. Shark’s narrower construction, unsupported by the patent, must be rejected.

H. “mission status report” (’676, claims 1, 4, 5, 11, 12)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary.	“a description of the status of a cleaning task”

The ’676 patent claims methods of cleaning a room using a robot. One step in the claimed methods is “transmitting a *mission status report* from the robotic cleaning device to [a] mobile device.” ’676 patent (claim 1). Shark’s proposed construction substitutes “cleaning task” for “mission” and “description” for “report.” Neither replacement finds support in the patent, and neither replacement is necessary. No construction of this term is needed.

The claims and specification do not identify anything that *must* be included in a “mission status report.” A “mission status report” can be transmitted “during” or “after” a cleaning operation is complete, *id.* (claims 4, 5); with or without “authenticating a communication link between the robotic cleaning device and the mobile device,” *id.* (claim 12); “wirelessly” or not, *id.* (claims 11); and alone or with a “power level report,” *id.* Consistent with the claims’ flexible approach, the specification notes that “mission status reports” may include information such as, “e.g. mission completed/abandoned/battery depleted, etc.” *Id.* at 8:45-46.

To the extent Shark believes a “mission status report” must include a “description” or something more than a simple indicator that a mission has ended, Shark is wrong. Shark cannot expand the required contents of a “mission status report” by replacing “report” with “description.” Nor can it do so by replacing the narrower term “mission” with the broader term “cleaning task.” In the patent, “mission” and “task” are not interchangeable. The specification repeatedly uses both terms in a single sentence, and in a way that shows they mean different things. *See* ’676 patent at

7:36-42, 7:56-60, 8:3-6, 8:19-20, 8:66-9:4. Indeed, the specification says a “task” can optionally *include* a “mission”: “For a mobile cleaning robot, these *task* commands 30 could include cleaning a specific spot, carrying out a specified cleaning *mission*, cleaning at a specific power level, stop and power down, power up, *or* return to a docking station.” ’676 patent at 8:23-27. Shark’s construction is at odds with the claims and specification, and cannot be correct.

I. “transmitting a power level [or ‘mission status’] report from the robotic cleaning device to a mobile device” (’676, claim 1); “receiving, from the mobile device at the robotic cleaning device, a command to perform a cleaning operation at a user-selected cleaning power” (’676, claim 10)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary.	<p>“sending a power level [or ‘mission status’] report from the robot over a communication link formed between the robot and a mobile device” (claim 1)</p> <p>“receiving at the robot a command to perform a cleaning operation at a user-selected cleaning power over a communication link formed between the mobile device and the robot” (claim 10)</p>

Claims 1 and 10 of the ’676 patent require, among other steps, “transmitting” and “receiving” information between the “robotic cleaning device” and a “mobile device.” In Shark’s view, some of the transmissions/receptions require a “communication link.” That is false. Neither claim mentions a “link” at all. Instead, the claims require only that information be “transmitt[ed]” or “receiv[ed]” between two devices, without specifying how. Those terms’ plain and customary meanings do not require a “communication link.” Ex. 9 at 1467, 1846; Ex. 10 at 1456, 1840.

Claim 12 reinforces that Shark’s construction is not correct. Claim 12 depends from claim 1 and requires “authenticating *a communication link* between the robotic cleaning device and the mobile device before transmitting the power level [and ‘mission status’] report[s].” The “striking and obviously intended contrast” between reciting “a communication link” in that dependent claim but no others indicates that claims 1 and 10 need not use a communication link at all. *Smith v.*

Snow, 294 U.S. 1, 14 (1935). Indeed, Shark’s reading otherwise ignores “settled law”: “when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining validity or infringement.” *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1122 (Fed. Cir. 1985) (en banc); see *H-W Tech., L.C. v. Overstock.com, Inc.* 758 F.3d 1329, 1333 (Fed. Cir. 2014) (citing *SRI*).

The specification reiterates that there need not be a “link” between each robot and a mobile device. In Figure 6A, a “communication device can communicate information to a single mobile or stationary robotic device, that can then send the communicated information to further devices directly, *without the need for additional linking to the communication device*. In this configuration, multiple mobile or stationary robotic devices can be configured, scheduled, and/or controlled through a link *with only a single robotic device*.” ’676 patent at 10:52-60 (numbers omitted).

And even if each robot did need to be “linked” to a mobile device, the link need not be direct but could include, for example, linking through the cloud. The ’676 patent contemplates “various means of linking”—physical, wireless, and network (“Ethernet”)—showing that *how* information is transmitted and received is not narrowly prescribed, much less to a particular or direct “communication link.” *Id.* at 9:43, 10:35-67. Shark’s construction is incorrect.

J. “a bagless cyclonic vacuum configured to divert debris from an incoming flow using centripetal acceleration of the debris” (’048, claim 12)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “bagless vacuum that uses a cyclonic airflow to separate at least some debris.”	The term “bagless cyclonic vacuum” means “bagless vacuum structured to create cyclonic airflow to separate debris.” No further construction is necessary.

In addition to a cleaning robot, claim 12 of the ’048 patent requires a “robotic cleaner maintenance station” comprising a “collection bin” and an “air mover.” The air mover is configured to move debris from the robot to the collection bin using “a bagless cyclonic vacuum

configured to divert debris from an incoming flow using centripetal acceleration of the debris.”

Shark’s proposal for “bagless cyclonic vacuum” makes nonsense of the claims, and for no reason—Shark does not even dispute infringement of this element. If Shark’s proposal were accepted, the “air mover” would comprise “a bagless vacuum structured to create cyclonic airflow to separate debris configured to divert debris from an incoming flow using centripetal acceleration of the debris.” “Plugging [Shark’s] proposed construction into the claim language ... muddles, rather than clarifies, the claim language,” which is reason enough to reject it. *Immersion Corp. v. HTC Corp.*, 2015 WL 581572, at *5 (D. Del. 2015).

Even if Shark’s proposal were to replace the disputed phrase in its entirety, it still would fail. Much of Shark’s construction “merely rephras[es] or paraphras[es] the plain language of [the] claim,” which “does not represent genuine claim construction.” *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 863 (Fed. Cir. 2004). And there is no sound basis for substituting “structured to” for “configured to.” The specification does not use the term “structured” at all, much less to describe a bagless cyclonic vacuum. To the extent Shark believes its proposal “would involve simply substituting a synonym for the claim term,” the better course is “to allow the claim language to speak for itself.” Peter S. Menell, *PATENT CASE MANAGEMENT JUDICIAL GUIDE* 5-45 (3d ed. 2016). Substituting one term for another “will not help the jury.” *IpLearn, LLC v. Kenexa Corp.*, 2014 WL 573327, at *2 (D. Del. 2014). Shark’s proposal should be rejected.

K. “disengaged from the station housing in a vertical direction relative to the station housing” (’048, claim 12)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “disengaged” means “removed or separated.” No further construction is necessary.	“vertically released from an engaged position with the station housing”

In claim 12 of the ’048 patent, the “collection bin” of the maintenance station must be

“configured to be disengaged from the station housing in a vertical direction relative to the station housing.” None of the terms are technical, and the limitation needs no construction. No “jury will have any difficulty understanding” what “disengaged” means. *Stern v. Globus Med., Inc.*, 2017 WL 3638072, at *4 (D. Del. 2017) (“no construction is necessary” for “engaged”); *cf. Primos, Inc. v. Hunter’s Specialties, Inc.*, 451 F.3d 841, 848 (Fed. Cir. 2006) (construing “engaging” as “to come into contact with”); Ex. 11 at 165 (“disengage”: “To break the contact between two objects”).

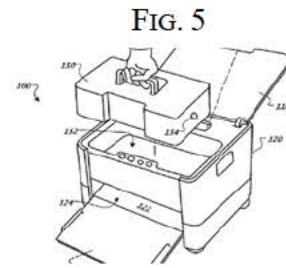
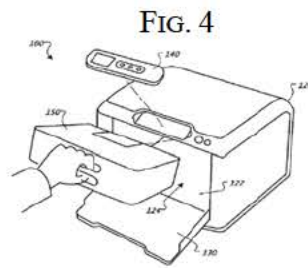
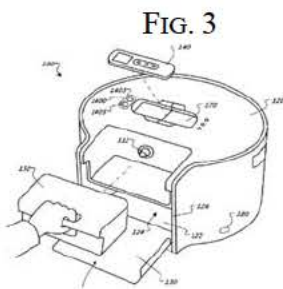
Shark nonetheless seeks to construe the term to focus on a “release” mechanism instead of disengagement generally. But the claims do not recite a “release” mechanism for engaging or disengaging the collection bin, nor do they otherwise describe the process for disengagement (other than to say it must occur in a vertical direction). If a collection bin can be removed from the station housing by pulling it upward relative to the housing, then it satisfies the limitation.

Nor would a jury mistake the well-known meaning of the ordinary word “vertical.”² Shark apparently believes, however, that the claimed collection bins must disengage in a purely vertical direction, without even the slightest horizontal or rotational movement. That is incorrect. The claims themselves describe a conspicuously broad “disengage[ment].” The bin is not disengaged purely “vertically,” but instead “in a vertical direction.” That “use [of] the indefinite article ‘a,’ not the definite article ‘the,’ suggest[s] less precision.” *Wright Asphalt Prods. Co. v. Pelican Ref. Co.*, 2011 WL 845917, at *22 (S.D. Tex. 2011). And courts have rejected mathematically exacting constructions of “vertical” (or variants) that would require “eject[ion] in a direction of 90° from

² See, e.g., *Unverferth Mfg. Co. v. Meridian Mfg., Inc.*, 2020 WL 1919922, at *12 (N.D. Iowa 2020) (“vertical”: “generally upright”); *Unverferth Mfg. Co. v. J&M Mfg. Co.*, No. 3:16-cv-2282, D.I. 56 at 7 (N.D. Ohio 2017) (same); *Trebro Mfg., Inc. v. Firefly Equip., LLC*, No. 13-cv-36, D.I. 227 at 2 (D. Mont. 2014) (“vertical”: “upward direction toward the sod carrier”); *Back In Five, LLC v. Infinite Int’l, Inc.*, 2012 WL 13008294, at *10 (C.D. Cal. 2012) (“vertically lifting component”: “a path for moving primarily upward”).

the horizon.” *Sharper Image Corp. v. Honeywell Int’l, Inc.*, 2005 WL 6219908, at *7 (N.D. Cal. 2005) (construing “vertically removable” as “removable in a vertical direction”).³

The specification’s description of disengaging the collection bin confirms that it need not happen purely vertically. *See* ’048 patent at 6:18-27, figs. 3-5. As Figures 3-5 make clear, that description merely distinguishes locations on the station housing from which the bin can be “disengaged”: either from the housing’s side, which requires disengagement “substantially parallel to the ground” (figs. 3 & 4), or from the housing’s top, which requires disengagement “in a vertical direction” (fig. 5). *Id.* The descriptions are not geometrically exacting.



Consistent with the claims, the specification does not exclude systems in which the collection bin disengages from the station housing at an angle somewhat more acute or obtuse than a perfect right angle. Shark’s restrictive proposal is incorrect.

L. “service opening in a bottom portion of the cleaning bin” (’048, claim 12)

iRobot’s Proposed Construction	Shark’s Proposed Construction
No construction necessary. But if the Court finds that the term requires construction, then “service opening in a bottom part or section of the cleaning bin.”	“service opening on the bottom surface of the cleaning bin”

Claim 12 of the ’048 patent requires a “service opening in a *bottom portion* of the cleaning

³ iRobot disagrees that Shark’s collection bin cannot be removed at a 90° angle regardless. If a collection bin can be removed from the station housing by applying a purely vertical force, then it satisfies this limitation even under Shark’s understanding of the claim.

bin” carried by the robot’s chassis. As with many other terms Shark seeks to construe, “bottom” and “a bottom portion” are not “technical terms or terms of art, [and] deciphering their plain and ordinary meaning ‘involves little more than the application of the widely accepted meaning of commonly understood words.’” D.I. 78 at 7-8 (quoting *Phillips*, 415 F.3d at 1314).

Claim 12 does not use “a bottom portion” precisely. It uses “the indefinite article ‘a,’ not the definite article ‘the,’ suggesting less precision about [its] location[.]” *Wright*, 2011 WL 845917, at * 22. And “[p]ortion” is no more exacting: “a portion” is “a part of a whole; an amount, section, or piece of something.” Ex. 10 at 1363; *see also* Ex. 9 at 1373 (similar). “[A] bottom portion” of an object thus is “not an absolute position” or particular surface, but instead a “relative term” that “denot[es] the relationship of one portion to another”—and may include, for example, any “area below a middle portion.” *Wright*, 2011 WL 845917 at *1, 22, 25.

The specification’s use of “portion” confirms that it is not limited to a “surface” as Shark contends. In Figures 3 and 4 (*see supra* p. 15), the collection bin is attached to “a top *portion*” or “a front or overhanging *portion* of the housing,” neither of which is limited to a housing surface of the maintenance station. ’048 patent at 6:18-23, fig. 3 (bin attached to housing side), fig. 4 (same). In Figures 25A and 25B, the maintenance station has “a docking *portion* 1202” and “a trash can *portion* 1210,” which are not surfaces. *Id.* at 13:30-14:12. And in Figures 26A and 26B, the “interior *portions*” of the maintenance station are not surfaces either. *Id.* at 14:18-27. Consistent with the claim’s use of the generic term “portion,” the specification explains that the “evacuation port assembly [can be] installed along an edge of the outer shell, on a top most portion of the outer shell, on the bottom of the chassis, *or other similar placements* where the evacuation port has ready access to the contents of the cleaning bin.” *Id.* at 8:8-14 (numbers omitted); *see id.*, figs. 9, 10, 17A-C (depicting evacuation port on a side of the cleaning bin).

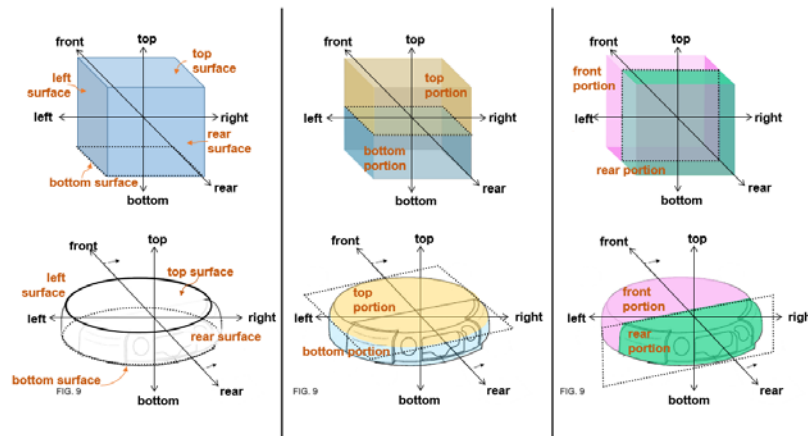
Citing the above-quoted passage and others from the specification, the Court tentatively “question[ed]” whether “a bottom portion” could encompass more than the “bottom surface.” D.I. 78 at 8-9. Respectfully, none of the cited passages shows “a bottom portion” is limited to “the bottom surface.” None redefines “portion.” None prevents a “rear,” “side,” or “edge” from having a bottom portion or half. Each cited “bottom” refers to “*the* bottom” of an object, and “[a/the] bottom” undisputedly may be part of “*a* bottom portion.” ’048 patent at 8:11, 9:55, 10:12. And every cited passage describes an “example” or “some implementations,” not “a clear disclosure that the patentee intended the claims to be limited as shown.” *Id.* at 6:28-35, 8:8-14, 9:52-56, 9:66-10:2, 10:5-17; *MBO Labs.*, 474 F.3d at 1334; *see Imaginal*, 805 F.3d at 1109-10 (similar).

Indeed, if iRobot wanted to claim a “bottom *surface*,” it certainly knew how. The specification describes “a lower *surface* of the robot.” ’048 patent at 5:32-34. And for the service opening in particular, the specification provides ready-made language for placing that element exclusively on the bottom surface if that was the intent—“an *underside* of the robot.” *Id.*, figs. 13A-16B, 9:43-52 (showing “access to an underside of the robot 10 for servicing the cleaning bin 50... [by] evacuat[ing] debris down out of the robot bin”). But iRobot chose *not* to claim a service opening on the “underside” or “bottom *surface*” of the cleaning bin. Instead, it chose a “bottom *portion*,” and there is no sound basis for departing from the ordinary meaning of that term.

In its preliminary injunction decision, the Court tentatively found that “language in the grandparent and parent applications” of the ’048 patent “raise[d] doubt as to whether ... ‘bottom portion’ [is] inclusive of the ‘rear’ or ‘back end’ and the bottom surface of the RVC.” D.I. 78 at 9-10. iRobot again respectfully disagrees. iRobot did not “clear[ly] and deliberate[ly] disavow[]” the side of a cleaning bin from the scope of “a bottom portion” when prosecuting either application. *Inline Plastics Corp. v. EasyPak, LLC*, 799 F.3d 1364, 1369 (Fed. Cir. 2015). To the contrary,

because iRobot’s supposedly disavowing statements were “not the basis of [its] distinction” over the prior art, they were not “clear and unmistakable” disclaimers. *Inline*, 799 F.3d at 1369-70; *see 01 Communique Lab., Inc. v. LogMeln, Inc.*, 687 F.3d 1292, 1298 (Fed. Cir. 2012) (rejecting finding of prosecution disclaimer that mistook how applicant “differentiat[ed]” prior art); *Nelcor Puritan Bennett, Inc. v. Masimo Corp.*, 402 F.3d 1364, 1370 (Fed. Cir. 2005) (rejecting reading of prosecution history that misinterpreted the “distinction that the applicants sought to draw”); *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1092 (Fed. Cir. 2003) (rejecting prosecution disclaimer argument based on the “contrast drawn by the patentee” between the claims and prior art).

Accepting Shark’s argument would mean that a robot’s “bottom” cannot overlap with a “side” or “rear.” That flunks basic geometry. As these annotations of a cube and Figure 9 show, a side/rear surface can overlap a bottom portion, and a bottom surface can overlap a rear portion.



For iRobot’s parent application, whether a *side surface* and a bottom portion of a robot were mutually exclusive (they are not) and whether an evacuation port is on a *side* versus the bottom surface of a robot were not iRobot’s bases for distinguishing the *Reed* reference. *Reed* had a debris outlet only “on a *top* surface of the mobile unit.” Ex. 14 at 81. iRobot’s distinction over *Reed* thus concerned only the difference between a *top* and “a bottom surface.” *Id.* Because *Reed* did not disclose a debris outlet on a side surface, iRobot never contrasted an evacuation port on a

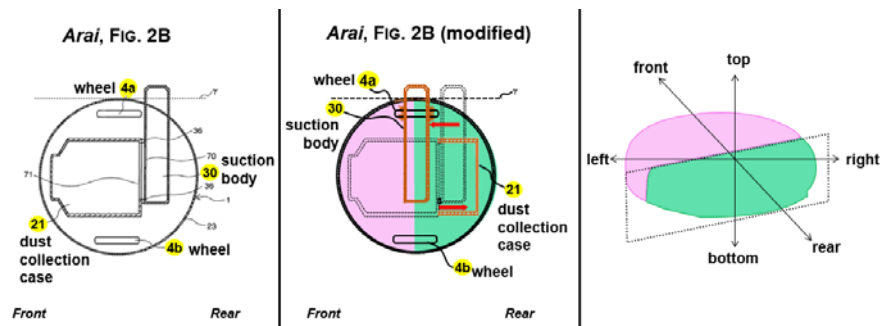
robot's *side surface* with one on a robot's bottom surface—much less redefined “a bottom portion” to clearly and unmistakably disavow evacuation ports on a side of the cleaning bin.

iRobot's arguments distinguishing *Reed*'s top and bottom surfaces are irrelevant regardless—the examiner forbade the arguments, and iRobot withdrew them. After the parent application was initially rejected for claiming more than one distinct invention, iRobot elected to pursue claims to robots with evacuation ports only on the *top* of the robot. *Id.* at 48, 50, 51-57, 86, 168. When iRobot later tried to distinguish *Reed* based on claims requiring service openings on “a *bottom* portion” of the cleaning bin, the examiner thus reminded iRobot of its earlier election and issued notices of non-compliance. *Id.* at 84-86, 165-168. iRobot then withdrew the amendment and arguments based on “a bottom portion.” *See id.* at 96, 169-186. Because “the examiner ... expressly rejected [iRobot's amendments and arguments], a potential infringer [can]not then reasonably rely on” those statements. *Power Integrations, Inc. v. ON Semiconductor Corp.*, 396 F. Supp. 3d 851, 864 (N.D. Cal. 2019); *see Motiva Patents, LLC v. Sony Corp.*, 2019 WL 3933670, at *19-20 (E.D. Tex. 2019) (similar); *Abbott Labs. v. Church & Dwight Co.*, 2008 WL 5387848, at *8 (N.D. Ill. 2008) (similar).⁴

For the grandparent application, whether a *side surface* and a bottom portion of a robot were mutually exclusive (they are not) and whether an evacuation port is on a *side* versus the bottom surface of a robot again were not iRobot's bases for distinguishing the prior art. Instead, the key distinction was whether an evacuation port was at the “rear” of a device—whether on a side *or* bottom surface, both of which can be in a device's bottom portion. *See supra*. Compared to the *Arai* reference, iRobot's invention was advantageous because “disposing a plurality of

⁴ Unlike with the parent application, the examiner did *not* reject the '048 patent's application as claiming more than one distinct invention, and iRobot did not disavow claims covering robots that have a service opening on a bottom portion of a cleaning bin.

evacuation ports along the *back end* of the chassis can improve compact packaging of the robot” by, for example, “allowing the area along the bottom portion of the chassis to be used to carry sensors, wheels, and a cleaning head.” Ex. 16 at 23-24. In *Arai*, however, moving “the suction body 30 away from the *rear* of the cleaning device 1 to allow the dust collection case 21, 21a [and evacuation ports] to be positioned toward the *rear* of the cleaning device 1 would have resulted in the wheels 4a, 4b interfering with the transverse movement of the suction body 30, shown for example in FIG. 2b.” *Id.* at 24; *see* Ex. 17 ¶ 29 (front of *Arai* is to the left); *id.*, fig. 2B (annotated).



In other words, *Arai*’s device could not accommodate an evacuation port on its *rear*, regardless of whether the port were on a rear side or rear bottom surface, both of which could be in a bottom portion of the device. iRobot thus did not contrast ports on a *side surface* versus the bottom surface of a robot when distinguishing *Arai*. Nor did iRobot clearly and unmistakably redefine “a bottom portion” to disavow evacuation ports on a side of the cleaning bin.

“There is no ‘clear and unmistakable’ disclaimer if a prosecution argument is subject to more than one reasonable interpretation,” and iRobot’s prosecution statements have at least one reasonable interpretation that “is consistent with [iRobot’s] proffered meaning of the disputed term.” *01 Communique*, 687 F.3d at 1297. The meaning of “bottom portion” is truly plain, and nothing in the intrinsic record shakes that conclusion. No construction is needed.

CONCLUSION

For the foregoing reasons, the Court should accept iRobot’s proposals.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

This document was filed through the CM/ECF system and will be served on SharkNinja pursuant to Fed. R. Civ. P. and L.R. 5.2.

/s/ Anders P. Fjellstedt

Anders P. Fjellstedt